IN THE SPECIFICATION

Please amend the paragraphs of the specification as follows:

Please replace the first paragraph on page 1, commencing on line 2, with the following amended paragraph:

The present application is a continuation of U.S. Patent Application No. 09/345,700, filed June 30, 1999, now U.S. Patent No. 6,449,490, issued September 10, 2002, and assigned to the assignee of the present application.

Please replace the last paragraph on page 7, commencing on line 17, with the following amended paragraph:

FIG. 1 is a simplified block diagram of a communication system 100 in accordance with the presently disclosed method and apparatus. The system 100 includes a common transmitting station 102 and a plurality of users 104. In FIG. 1, four such users 104 are shown. However, it will be understood by those skilled in the art that any number of users 104 may be included in the system 100. Furthermore, in cases in which one or more of the users 104 are mobile, the number of users 104 in the system may vary over time. Each user ~~104Can~~ 104 can be considered as a receiving element of a distributed receiver that includes all, or some, of the users 104. However, the users 104 of the presently disclosed method and apparatus need not combine, or provide to a common end user, the data that is received by each user 104. Accordingly, the users 104 may also be considered to be completely independent.

Please replace the second paragraph on page 8, commencing on line 17, with the following amended paragraph:

In one embodiment of a system in which the disclosed method and apparatus may be used, the common transmitting station 102 transmits signals to users during time slots. Each time slot preferably has a predefined and equal duration. However, the duration of such time slots may vary to accommodate varying data rates or for other reasons. The common transmitting station 102 preferably only transmits to one user ~~104During~~ 104 during each time slot. However, in an

alternative embodiment of the disclosed method and apparatus, the common transmitting station 102 transmits signals to more than one, but less than all, of the users 104 in each time slot. In either case, for each time slot, the common transmitting station 102 must determine to which user or users 104 signals are to be transmitted.

Please replace the last paragraph on page 8, commencing on line 28 and bridging pages 8 and 9, with the following amended paragraph:

This document discloses a method and apparatus for determining to which user or users 104 the common transmitting station 102 shall transmit in a way that maximizes the amount of data to be transmitted to all users 104, while ensuring that each user 104 receives an equitable amount of data with respect to each other user 104 over a predetermined ~~"fairness time-scale".~~ "fairness time-scale." An "equitable amount of data" means that essentially equal receive-capability ratios. The receive-capability ratio is equal to the amount of data transmitted over a channel relative to the data rate that the channel can support. However, the disclosed method and apparatus can alternatively be adjusted to favor greater data throughput at the expense of providing more access to users using channels that can support higher data rates over the fairness time-scale.

Please replace the first paragraph on page 9, commencing on line 4, with the following amended paragraph:

In accordance with the presently disclosed method and apparatus, each user 104 preferably monitors the condition of the channel from the user 104 to the common transmitting station 102 and transmits an instantaneous channel condition indicator to the common transmitting station 102. Each instantaneous channel condition indicator is a value representative of the condition of one channel during one time slot. In one particular embodiment of the presently disclosed method and apparatus, the instantaneous channel condition indicators are values representing a desired rate at which data is to be transmitted to the user 104 by the common transmitting station 102. In one such embodiment, the instantaneous channel condition indicators are data rate ~~request~~ control (DRC) messages. Such DRCs typically indicate the maximum data rate at which data can be transmitted over the channel 106 with a predetermined bit error rate (BER).

Please replace the second paragraph on page 9, commencing on line 17, with the following amended paragraph:

The maximum data rate for a particular channel 106 is indicative of the carrier-to-interference ratio (C/I) for the channel 106. Alternatively, each user 104 monitors and communicates the C/I directly. In yet another alternative embodiment of the presently disclosed method and apparatus, the user ~~104Communicates~~ 104 communicates instantaneous channel condition indicators that provide the common transmitting station 102 with an indication of the condition (i.e., quality) of the channel 106 without direct reference to either C/I or data rates. For example, the user 104 may provide the common transmitting station 102 with an indication of the amount of interference received by the user 104 and the amount of loss in the channel 106 between common transmitting station and the user 104.

Please replace the second paragraph on page 11, commencing on line 11, with the following amended paragraph:

This can be understood by analyzing the case in which a first user 104A is associated with a channel 106A that has relatively great variations in the channel conditions, while a second user 104B is associated with a channel 106B that has relatively small variations in the channel conditions. FIG. 2B is a graphical representation of the channel conditions of such a first channel 106A[[,]] and second channel 106B. A line 209 represents the channel conditions of the first channel 106A and a dotted line 211 represents the channel conditions of the second channel 106B. A line 213 represents the average channel condition of the first channel 106A and a dotted line 215 represents the average channel condition of the second channel 106B.

Please replace the last paragraph on page 11, commencing on line 21, with the following amended paragraph:

Assuming that over the selected fairness time-scale, the channel condition of the first channel 106A is greater than average for half the time and less than the average for half the time, the same amount of access time will be granted to both the first and second channels 106A, 106B. However, the first channel 106A will have greater throughput than it would have had if equal

access time were granted to each channel arbitrarily (e.g., in round robin fashion). However, the second channel 106B would have nearly the same data throughput[[,]] since the variations in the channel condition of the first channel 106A would dominate the selection process at the common transmitting station 102. That is, during the times when the first channel 106A has a relatively high quality, the second channel 106B will have an average quality. Accordingly, the first channel will be selected. During those times when the first channel 106A has a relatively low quality, the second channel 106B will have an average quality, and so be selected.

Please replace the second paragraph on page 13, commencing on line 12, with the following amended paragraph:

The low pass function can be performed using one of several filter functions. In accordance with one such filter function, the filter output value F(t) is calculated as provided in the following expression:

$$F_k(t+1) = (1-1/t_c) * F_k(t) + 1/t_c * (ChC_k) \qquad \text{Eq. 1}$$

where $F_k(t)$ is the current filter output value at time t for the k^{th} channel, t_c is a time constant of a low pass filter function provided by this expression, and ChC_k is the instantaneous channel condition indicator for the k^{th} channel. The time constant represents a ~~"fairness time_scale".~~ "fairness time_scale." The fairness time-scale represents the duration of time over which it is desirable to have essentially equal amounts of data transmitted to each user. It should be understood that the fairness time-scale is dependent upon factors that include the type of data that is being transmitted to the users. For example, assume the transmission of internet data to users attempting to gain access to the internet. If each user receives essentially equal amounts of data over a duration of approximately one second, each user is likely to consider the access granting scheme to be fair, even if one user gets greater access for the entire beginning portion of a second. Accordingly, one second would be an appropriate fairness time-scale.

Please replace the last paragraph on page 14, commencing on line 26 and bridging pages 14 and 15, with the following amended paragraph:

It can be seen from Eq. 4 that whenever the channel 106A is not selected the filter output value decays at a rate determined by the time constant t_c. The updated value does not take into account the instantaneous condition of the channel. The filter output value for the channel 106A will continue to decay, regardless of the condition of the channel, until the channel 106A is selected again. At that time, the filter output value will be updated using the instantaneous channel condition indicator (i.e., the instantaneous channel condition indicator value most recently received by the common transmitting station 102). In the case in which the instantaneous channel condition indicators are related to the rate at which data is to be transmitted over the channel 106A, the filter output value is a representation of the total throughput of the channel 106A. That is, Eq. 4 can be ~~through~~ thought of as a low pass filter function with a time constant of t_c applied to the instantaneous rate at which data is being transmitted on the channel. The result of the filtering is an average rate at which data is being transmitted over the channel for a period of time equal to the time constant t_c.

Please replace the first paragraph on page 17, commencing on line 3, with the following amended paragraph:

The channel selection processor 405 is coupled to each access metric ~~calculators~~ calculator 403 via signal lines 407. Signal lines 407 couple information from the channel selection processor 405 to each filter module 401. The information indicates which channel 106 was selected for transmission in the next slot. The information may be in the form of a value indicating the particular channel 106 that was selected. Alternatively, the information may be a digital value indicating whether or not the receiving filter module 401 is associated with the selected channel. It should be understood that in the case in which the functions of the filter module 401, the access metric calculator, and the channel selection processor are all performed in one module, there may be no need for "signals" to be generated to indicate the results of each function. Alternatively, the results of one or more of the functions may be stored in a location accessible to one or more of the other functions.

Please replace the second paragraph on page 17, commencing on line 16, with the following amended paragraph:

Referring back to FIG. 3, the processor 307 outputs information indicating which channel 106 has been selected on a signal line 309 to a data multiplexer/channel selector 311. Several data lines 313A, 313B, 313C, and 313D provide data to the data multiplexer/channel selector 311. Each of the data lines provides data that is to be transmitted to one of the users 104. In response to the signal provided on the signal line 309, the data multiplexer/channel selector 311 selects one of several data streams to be coupled to the transceiver front end 303. The selected data stream is coupled to the transceiver front end over a signal line 315. In accordance with the preferred embodiment of the presently disclosed method and apparatus, the transceiver front end 303 transmits the information received on signal line 315 to the user 104 associated with the selected channel 106 at a rate that is proportional to the most recent instantaneous channel condition indicator received from selected user 104.

Please replace the first paragraph on page 18, commencing on line 16, with the following amended paragraph:

In accordance with one embodiment of the presently disclosed method and apparatus, the common transmitter 102 determines an access metric based on the condition of the channel to each user and the ~~"throughput".~~ "throughput." Throughput is defined as the amount of information that has been transmitted over a period of time. Accordingly, throughput can be associated with one or more users. The throughput associated with a particular user is the amount of information that has been transmitted to that user. The throughput of the system is the total amount of information that has been transmitted to all users.